



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

1501 MAIL SERVICE CENTER, RALEIGH, N.C. 27611-1501

BEVERLY EAVES PERDUE  
GOVERNOR

EUGENE A. CONTI, JR.  
SECRETARY

June 10, 2010

Mr. Thomas J. Bonfield  
City Manager  
City of Durham  
101 City Hall Plaza  
Durham, NC 27701

Subject: Extension of Municipal Maintenance Agreement, Schedule C

Dear Mr. Bonfield:

This is in reference to the current Schedule C, Municipal Maintenance Agreement, between the City of Durham and NCDOT Division 5 for the maintenance of traffic signals on NCDOT roadways within the city limits of Durham covering fiscal year 2010-2011.

In accordance with executed agreements, I am proposing to extend this agreement, Schedules C, with a 2% increase of the reimbursements rate starting July 1, 2010 and ending June 30, 2011. If the City approves of this extension and rate increase, please sign and date the bottom of this letter and return the original to me. A signed copy will be returned to the City for its records.

If we may be of further assistance, please advise.

Sincerely,

J. W. Bowman, PE  
Division Engineer

Attachment

cc: A. Battle Whitley, PE, Division Operations Engineer  
Al Grandy, Division Traffic Engineer  
Mark Ahrendson, Director, Durham Department of Transportation  
Larry McGlothlin, Traffic Operations Engineer, City of Durham  
Sheila Gibbs, Contract Officer, NCDOT  
Susan McFall, Division Business Officer

APPROVED:

\_\_\_\_\_  
Durham City Manager

\_\_\_\_\_  
Date Division 5 Traffic Engineer

\_\_\_\_\_  
Date

# MUNICIPAL MAINTENANCE AGREEMENT - TRAFFIC CONTROL DEVICES SCHEDULE C - SIGNALS - LEVEL C (Page1)

The Board of Transportation will reimburse the Municipality for maintenance of traffic signals on the following schedule.

Place a check beside the value for each maintenance function(s) the Municipality agrees to perform under any line item if all maintenance functions are not selected.

Place a check beside the value under "Total Maintenance" if the Municipality is to perform all maintenance functions for any line item.

<u>Item</u>	<u>Emergency Maintenance</u>	<u>Preventive Maintenance</u>	<u>Bench Maintenance</u>	<u>Total Maintenance</u>
A. Vehicular Signal Section(Average of 10 heads/int. or 30 section/int.)	<input type="checkbox"/> \$1.21	<input type="checkbox"/> \$9.84	<input type="checkbox"/>	<input type="checkbox"/> \$11.05
B. Pedestrian Signal Head(Average of 4 heads/int.)	<input type="checkbox"/> \$3.04	<input type="checkbox"/> \$20.24	<input type="checkbox"/>	<input type="checkbox"/> \$23.28
C. Fiber-Optic or LED Blank-out Sign	<input type="checkbox"/> \$12.15	<input type="checkbox"/> \$12.15	<input type="checkbox"/>	<input type="checkbox"/> \$24.30
D. Pretimed Electronic Controller/Cabinet	<input type="checkbox"/> \$72.85	<input type="checkbox"/> \$133.55	<input type="checkbox"/> \$220.63	<input type="checkbox"/> \$427.03
E. 2-8 Assigned Phase Actuated Controller/Cabinet	<input type="checkbox"/> \$72.85	<input type="checkbox"/> \$485.63	<input type="checkbox"/> \$262.65	<input type="checkbox"/> \$821.13
F. 2-8 Assigned Phase Actuated Controller/Cabinet with Machine-vision Detection	<input type="checkbox"/> \$72.85	<input type="checkbox"/> \$485.63	<input type="checkbox"/> \$787.95	<input type="checkbox"/> \$1,346.43
G. Flashing Beacon Controller/Cabinet	<input type="checkbox"/> \$12.14	<input type="checkbox"/> \$121.41	<input type="checkbox"/>	<input type="checkbox"/> \$133.55
H. Travel Costs for Preventive Maintenance at Signalized Intersections(not Flashers)	<input type="checkbox"/>	<input type="checkbox"/> \$60.70	<input type="checkbox"/>	<input type="checkbox"/> \$60.70

Item Lump Sum Payment

AA. Replace Loop(includes labor, materials, and other costs for sawcutting and sealing) <sup>1</sup>	<input type="checkbox"/> \$4.73 per foot of sawcut
AB. Furnish and install Lead-in Cable	<input type="checkbox"/> \$1.58 per foot installed
AC. Furnish Single Channel Loop Detector Unit <sup>2</sup>	<input type="checkbox"/> \$105.06
AD. Furnish Two-Channel Loop Detector Unit <sup>2</sup>	<input type="checkbox"/> \$168.10
AE. Furnish and install Pull Box	<input type="checkbox"/> \$157.59

**MUNICIPAL MAINTENANCE AGREEMENT - TRAFFIC CONTROL DEVICES**  
**SCHEDULE C - SIGNALS - LEVEL C (Page 2)**

AF. Furnish and install Pull Box Cover	<input type="checkbox"/>	\$57.78
AG. Furnish and install Conduit	<input type="checkbox"/>	\$3.68 per foot installed
AH. Furnish and install Riser	<input type="checkbox"/>	\$210.12
AI. Furnish and install 35-foot Class 3 Wood Pole <sup>2</sup>	<input type="checkbox"/>	\$556.92
AJ. Furnish and install 40-foot Class 3 Wood Pole <sup>2</sup>	<input type="checkbox"/>	\$615.06
AK. Furnish and install Guy/Anchor Assembly	<input type="checkbox"/>	\$210.12
AM. Furnish and install Audible Pedestrian Signal <sup>2</sup>	<input type="checkbox"/>	\$420.24
AN. Furnish 12-inch 3-Section Vehicular Signal Head <sup>2</sup>	<input type="checkbox"/>	\$102.00
AO. Furnish 12-inch 4-Section Vehicular Signal Head <sup>2</sup>	<input type="checkbox"/>	\$137.70
AP. Furnish 12-inch 5-Section Vehicular Signal Head <sup>2</sup>	<input type="checkbox"/>	\$224.40
AQ. Furnish 8-inch 3-Section Vehicular Signal Head <sup>2</sup>	<input type="checkbox"/>	\$66.30
AR. Furnish 8-inch 4-Section Vehicular Signal Head <sup>2</sup>	<input type="checkbox"/>	\$86.70
AS. Furnish 8-inch 5-Section Vehicular Signal Head <sup>2</sup>	<input type="checkbox"/>	\$153.00
AT. Furnish Pedestrian Signal Head <sup>2</sup>	<input type="checkbox"/>	\$86.70
AU. Furnish LED Indication - 12-inch RED Ball <sup>2</sup>	<input type="checkbox"/>	\$42.02
AV. Furnish LED Indication - 12-inch YELLOW Ball <sup>2</sup>	<input type="checkbox"/>	\$83.90
AW. Furnish LED Indication - 12-inch GREEN Ball <sup>2</sup>	<input type="checkbox"/>	\$52.63
AX. Furnish LED Indication - 12-inch RED Arrow <sup>2</sup>	<input type="checkbox"/>	\$37.94
AY. Furnish LED Indication - 12-inch YELLOW Arrow <sup>2</sup>	<input type="checkbox"/>	\$70.13

# MUNICIPAL MAINTENANCE AGREEMENT - TRAFFIC CONTROL DEVICES SCHEDULE C - SIGNALS - LEVEL C (Page 3)

<u>Item</u>	<u>Lump Sum Payment</u>
AZ. Furnish LED Indication - 12-inch GREEN Arrow <sup>2</sup>	<input type="checkbox"/> \$45.59
BA. Furnish LED Indication - 8-inch RED Ball <sup>2</sup>	<input type="checkbox"/> \$37.64
BB. Furnish LED Indication - 8-inch YELLOW Ball <sup>2</sup>	<input type="checkbox"/> \$86.70
BC. Furnish LED Indication - 8-inch GREEN Ball <sup>2</sup>	<input type="checkbox"/> \$40.14
BD. Furnish and install Grounding System	<input type="checkbox"/> \$236.39
BE. Furnish Pretimed/Actuated Controller <sup>2</sup>	<input type="checkbox"/> \$1,260.72
BF. Furnish Pole-Mounted Cabinet <sup>2</sup>	<input type="checkbox"/> \$3,881.97
BG. Furnish Base-Mounted Cabinet <sup>2</sup>	<input type="checkbox"/> \$5,516.72
BH. Furnish LED Blank-Out Sign <sup>2</sup>	<input type="checkbox"/> \$2,040.00
BI. Furnish 3-channel NEMA-Plus Conflict Monitor <sup>2</sup>	<input type="checkbox"/> \$228.02
BJ. Furnish 6-channel NEMA-Plus Conflict Monitor <sup>2</sup>	<input type="checkbox"/> \$433.91
BK. Furnish 12-channel NEMA-Plus Conflict Monitor <sup>2</sup>	<input type="checkbox"/> \$532.70
BL. Furnish NEMA TS-2 Malfunction Management Unit <sup>2</sup>	<input type="checkbox"/> \$644.03
BM. Furnish Type 2010 Conflict Monitor with Absence of Red Monitoring <sup>2</sup>	<input type="checkbox"/> \$510.00
BN. Furnish Detection Camera/Sensor with Enclosure <sup>2</sup>	<input type="checkbox"/> \$1,575.90

# MUNICIPAL MAINTENANCE AGREEMENT - TRAFFIC CONTROL DEVICES SCHEDULE C - SIGNALS - LEVEL C (Page 4)

<u>Item</u>	<u>Lump Sum Payment</u>
BO. Perform Annual Inspection on Railroad-Interconnected Intersections	<input type="checkbox"/> \$190.18
BP. Furnish LED Indication - 12-inch Hand	<input type="checkbox"/> \$45.80
BQ. Furnish LED Indication - 12-inch Man	<input type="checkbox"/> \$84.15
BR. Furnish LED Indication - 12-inch Hand/Man Overlay	<input type="checkbox"/> \$121.13
BS. Furnish LED Indication - 16-inch Hand/Man Overlay with Countdown Module	<input type="checkbox"/> \$248.63

<sup>1</sup> Replacement of **defective** loop with loop of identical or upgraded design requires no prior approval. Upgrading of functional rectangular loops to Quadrapole design requires prior approval from Division Traffic Engineer.

<sup>2</sup> Requires prior approval from Division Traffic Engineer for reimbursement of non-emergency replacements. If item is covered under warranty, Municipality will not be reimbursed without prior approval from Division Traffic Engineer.

**Emergency Maintenance:** This maintenance includes all labor and incidental items to bring the operation of the intersection into reasonable conformance with the existing plan of record. Reimbursements for items AA through BN and BP through BS will be given for items utilized in the completion of this work. Sufficient spare equipment must be purchased at the expense of the maintaining agency to insure all intersections are continuously operating according to the plan of record.

**Preventive Maintenance:** This maintenance includes the labor and materials as outlined in the attached Schedule of Preventive Maintenance. *Reimbursements for items AA through BN and BP through BS will be given for items utilized in the completion of this work only upon prior approval by the Division Traffic Engineer.* Where specialty equipment is not addressed specifically in the attached schedule, manufacturer's recommendations should be followed to insure continued optimum operation. Sufficient spare equipment must be purchased at the expense of the maintaining agency to allow the completion of this work.

**Bench Maintenance:** This maintenance includes labor, parts and materials to repair electronic traffic signal control components. This work typically involves in-house repair of electronic assemblies by troubleshooting and replacing specific integrated circuit chips, repairing damaged printed circuit traces, and making circuit modifications. This work includes making hardware, firmware and software upgrades to equipment to insure optimum operation. This work must be completed in a timely manner to support the emergency and preventive maintenance functions.

**MUNICIPAL MAINTENANCE AGREEMENT - TRAFFIC CONTROL DEVICES**  
**SCHEDULE C - SIGNALS - LEVEL C (Page 5)**

Items included on this schedule may be added or deleted to those checked above by a request in letter form signed by the Mayor, Clerk (or Manager). The letter should be sent in quadruplicate to the Division Engineer accompanied by four (4) copies of the SCHEDULE with all appropriate items checked. If the Division Engineer approves the new SCHEDULE he should sign, as approved, all four (4) copies of the Municipality's letter of request. The Division Engineer then forwards one copy of the letter and SCHEDULE to the DOT Controller and the State Traffic Engineer, returns a copy of each to the Municipality, and retains a copy of each for his file. This new SCHEDULE became effective July 1, 2010 and continues to June 30, 2011.

The Board of Transportation reserves the right of verification that all selected maintenance functions are being properly performed. If it is determined that any authorized maintenance function is not being performed, the reimbursement will be reduced accordingly.

\_\_\_\_\_  
CITY OR TOWN

\_\_\_\_\_  
MAYOR OR MANAGER      DATE

\_\_\_\_\_  
CLERK      DATE

DEPARTMENT OF TRANSPORTATION

\_\_\_\_\_  
DIVISION ENGINEER      DATE